LAKE: PUFFERS P (ECHO L) (VLMP 19)
TOWN: DEXTER
COUNTY: PENOBSCOT

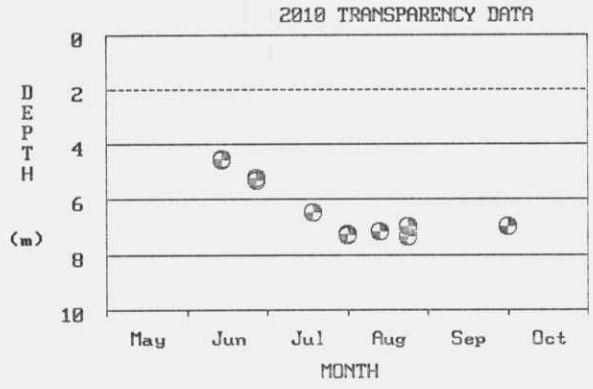
MIDAS: 744
TRUE BASIN: 1
SAMPLE STATION: 1

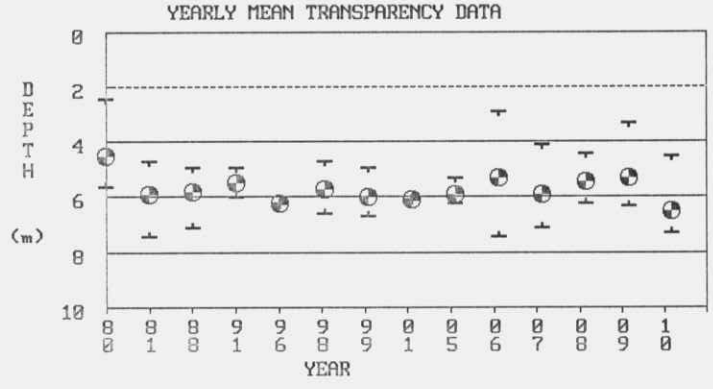
WHOLE LAKE INFORMATION
MAX. DEPTH: 16 m. (52 ft.)
MEAN DEPTH: 5 m. (16 ft.)
DELORME ATLAS #: 32
USGS QUAD: DEXTER
IFW REGION B: Belgrade Lakes (Augusta)
IFW FISH. MANAGMENT: Coldwater

TRUE BASIN CHARACTERISTICS
SURFACE AREA: 36.0 ha. (89.0 a.)
FLUSHING RATE: 1.63 flushes/yr.
VOLUME: 1393717.0 cu. m. (1131 ac.-ft.)
DIRECT DRAINAGE AREA: 4.10 sq. km. (1.58 sq. mi.)

PLEASE NOTE THE FOLLOWING: The SAMPLE STATION # refers to the location sampled. The term TRUE BASIN is used to define areas within a lake that are separated by shallow reefs or shoals and therefore function as separate lakes. There are approximately 50 lakes in the state that have more than 1 True Basin. True Basin Characteristics are now being included in the first section of these reports to enable users of the Phosphorous Loading Methodology to better evaluate the data. If there is no data for a particular True Basin, True Basin Characteristics must be obtained from the DEP. PUFFERS P (ECHO L) has 1 True Basin(s).

SECCHI DISK TRANSPARENCY GRAPHS:





Note: 2010 graphs may indicate multiple readings taken on a given day.

SUMMARY OF CHEMICAL AND TROPHIC STATE PARAMETERS:

[* indicates that Secchi disk was visable at bottom of lake (or one reading used in calculation was visable)].

	MEAN COLOR (SPU)	MEAN pH	MEAN ALK (mg/l)	MEAN COND. (uS /cm)	TOTAL PHOS. MEANS (ppb) EPI CORE	SURF GRAB	BOT. GRAB	PRO. GRAB	SECCHI DISK (m.) MIN.	MEAN	MAX.	N	CHLOROPHYLL A(ppb) MIN.	MEAN	MAX.	TROPHIC STATE INDICES EPI PHOS C	G	SEC	CHL
YEAR																			
1980	-	-	-	-	21	-	-	-	2.4	4.5	5.6	6	-	-	-	62	-	54	-
1981	-	-	-	-	10	-	-	-	4.7	5.9	7.4	6	0.7	1.7	3.2	43	-	40	27
1988	-	-	-	-	-	-	-	-	4.9	5.8	7.1	3	-	-	-	-	-	-	-
1991	12	7.98	62.0	119	14	-	80	-	4.9	5.5	6.0	2	2.3	2.3	2.3	-	-	-	-
1996	10	-	62.0	165	10	-	191	-	6.2	6.2	6.2	1	2.0	2.0	2.0	-	-	-	-
1998	-	-	-	-	-	-	-	-	4.7	5.7	6.6	3	-	-	-	-	-	-	-
1999	-	-	-	-	-	-	-	-	4.9	6.0	6.7	5	-	-	-	-	-	39	-
2001	16	8.13	16.5	190	7	-	55	-	6.1	6.1	6.1	1	4.0	4.0	4.0	-	-	-	-
2005	-	-	-	-	-	-	-	-	5.3	5.9	6.2	3	-	-	-	-	-	-	-
2006	15	8.24	67.2	157	10	-	36	-	2.9	5.3	7.4	4	3.4	3.4	3.4	-	-	-	-
2007	-	-	-	-	-	-	-	-	4.1	5.9	7.1	4	-	-	-	-	-	-	-
2008	-	-	-	-	-	-	-	-	4.4	5.4	6.2	5	-	-	-	-	-	44	-
2009	-	-	-	-	-	-	-	-	3.3	5.3	6.3	5	-	-	-	-	-	45	-
2010	-	-	-	-	-	-	-	-	4.5	6.5	7.3	4	-	-	-	-	-	-	-
SUMMARY:	13	8.10	51.9	158	12	-	90	-	2.4	5.7	7.4	14	0.7	2.7	4.0	53	-	45	27

LAKE: PUFFERS P (ECHO L) (VLMP 19) MIDAS: 744
TOWN: DEXTER *TRUE BASIN: 1
COUNTY: PENOBSCOT *SAMPLE STATION: 1

LATE SUMMER TEMPERATURE / DISSOLVED OXYGEN PROFILES:

	SAMPLE DATE							
DEPTH	08/27/91		08/15/96		08/15/01		08/10/06	
m	°C	ppm	°C	ppm	°C	ppm	°C	ppm
0.0	21.0	8.7	23.9	8.9	25.8	7.6	23.7	8.4
1.0	21.0	8.7	23.8	9.0	25.2	7.7	23.9	8.4
2.0	21.0	8.6	23.2	9.0	25.0	7.7	24.0	8.3
3.0	21.0	8.5	23.0	9.0	24.8	7.7	24.0	8.1
4.0	21.0	8.5	21.8	9.5	24.4	7.5	23.7	7.5
5.0	20.2	7.3	17.7	9.2	17.3	9.7	19.8	5.2
6.0	16.0	8.0	13.9	8.3	12.3	7.4	17.1	1.4
7.0	11.8	5.4	10.7	3.5	9.1	5.6	14.0	0.7
8.0	9.2	1.7	8.8	0.5	7.2	3.0	11.7	0.3
9.0	7.4	0.7	7.3	0.4	6.0	1.1	10.5	0.3
10.0	7.0	0.5	6.8	0.2	5.5	0.8	9.7	0.3
11.0	7.0	0.5	6.2	0.1	5.4	0.7	9.2	0.2
12.0	6.9	0.5	6.1	0.1	5.3	0.7	9.0	0.2
13.0	6.6	0.5	6.0	0.1	5.2	0.7	8.9	0.2
14.0	6.5	0.5	5.9	0.1	5.2	0.7	-	-
15.0	6.5	0.4	5.9	0.1	-	-	-	-

WATER QUALITY SUMMARY

PUFFERS POND (ECHO LAKE), DEXTER
MIDAS: 0744, Sample Station # 1, center of large area of pond

The Maine Department of Environmental Protection (ME-DEP) and the Volunteer Lake Monitoring Program (VLMP) have collaborated in the collection of lake data to evaluate water quality, track algal blooms, and determine water quality trends. This dataset does not include bacteria, mercury, or nutrients other than phosphorus.

Water quality monitoring data for Puffers Pond have been collected since 1980. During this period, 6 years of basic chemical information was collected, in addition to Secchi Disk Transparencies (SDT). In summary, the water quality of Puffers Pond is considered average, based on measures of SDT, total phosphorus (TP), and Chlorophyll-a (Chla). The potential for nuisance algal blooms on Puffers Pond is low to moderate.

Water Quality Measures: Puffers Pond is a non-colored lake (average color 13 SPU) with an average SDT of 5.7 m (18.8 ft). The range of water column TP for Puffers Pond is 7-21 parts per billion (ppb) with an average of 12 ppb. Chla ranges from 0.7 - 4.0 ppb with an average of 2.7 ppb. Recent dissolved oxygen (DO) profiles show moderate DO depletion in deep areas of the lake. The potential for phosphorus to leave the bottom sediments and become available to algae in the water column (internal loading) is moderate. Oxygen levels below 5 parts per million stress certain cold water fish, and a persistent loss of oxygen may eliminate or reduce habitat for sensitive cold water species.

Maine Department of Inland Fisheries and Wildlife manage this pond as a cold-water fishery.

Puffers Pond drains into Sebasticook Lake whose water quality has been degraded over the years by direct and indirect discharges. As part of the restoration of Sebasticook's water quality, the Soil Conservation Service has helped area farmers control nutrient rich run-off from their farmlands. Data gathered on Puffers Pond will be used to establish the efficiency of watershed controls.

See ME-DEP Explanation of Lake Water Quality Monitoring Report for measured variable explanations. Additional lake information can be found on the Internet at http://www.lakesofmaine.org/ and/or http://www.maine.gov/dep/blwq/lake.htm, or telephone the ME-DEP at 207-287-3901 or the VLMP at 207-783-7733.

Filename: puff0744, Revised: 02, 2/11 By: jp